

Montana Department of Natural Resources and Conservation  
Water Resources Division  
Water Rights Bureau

**ENVIRONMENTAL ASSESSMENT**  
**For Routine Actions with Limited Environmental Impact**

**Part I. Proposed Action Description**

1. Applicant/Contact name and address: **Vescovi Polled Herefords  
PO Box 333  
Roundup, MT 59072**
2. Type of action: **Application to Change a Water Right 40A 30064373**
3. Water source name: **Musselshell River**
4. Location affected by project: **Sections 13, 14 & 23 T7N R24E (Musselshell County)**
5. Narrative summary of the proposed project, purpose, action to be taken, and benefits: The DNRC shall issue a change authorization if an applicant proves the criteria in 85-2-402 MCA are met.

**Applicant proposes to change the point of diversion from a headgate to a pump site and convert historically flood-irrigated land to center pivot sprinkler irrigation. The project location is approximately 9 miles southwest of Roundup, Montana in Musselshell County. The claimed water rights to be changed are Statement of Claim Nos. 40A 14975 00 and 40A 14976 00, and the source of water is the Musselshell River. The proposal includes conversion to center pivot sprinkler irrigation on 131.1 acres, with a requested flow rate for the new pivot system of 2.32 CFS. The pivot acreage proposed to be irrigated is 131.1 acres, but the consumptive volume of water associated with the place of use will be commensurate with the volume historically and beneficially used under the existing flood irrigation system on the claimed 130-acre parcel. The location of the proposed point of diversion is in the NE NW SE Section 23, T7N, R24E and the place of use for center pivot irrigation is 61.0 acres in the NE Section 23, 56.2 acres in the SE Section 14, 12.0 acres in the SW Section 13 and 1.9 acres in the NW NW NW Section 24 all in T7N R24E.**

**The project will likely result in increased water management and reduced labor on acres under the center pivot compared to the acres previously flood irrigated.**

6. Agencies consulted during preparation of the Environmental Assessment:  
(include agencies with overlapping jurisdiction)

**Dept. of Environmental Quality Website - TMDL 303d listing  
MT. National Heritage Program Website - Species of Concern**

USDI Fish & Wildlife Service Website - Endangered and Threatened Species  
MT State Historic Preservation Office - Archeological/Historical Sites  
USDA Natural Resources Conservation Service – Web Soil Survey  
USDI Fish & Wildlife Service – Wetlands Online Mapper  
Montana Fish, Wildlife & Parks – MFISH Website

## **Part II. Environmental Review**

### **1. Environmental Impact Checklist:**

<b>PHYSICAL ENVIRONMENT</b>
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#### **WATER QUANTITY, QUALITY AND DISTRIBUTION**

**Water quantity** - Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.

*Determination:*           **No Significant Impact**

The reach of interest in the Musselshell River for this application has been identified as periodically dewatered and has been closed to most new appropriations from July 1 through September 30 by administrative rule. This change proposes to divert less water from the river to consume the same historic use from a new center pivot system. Whereas, the Applicant will be required to measure diversion for each of the two water rights being changed and will be limited to the same consumptive use associated with historic flood irrigation, this project will not have a significant impact on surface water quantity.

**Water quality** - Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.

*Determination:*           **No Significant Impact**

The reach of the Musselshell River near this project has been designated as needing a TMDL plan. The 2012 303d listing identifies impairments to aquatic life support probably caused by low flow alteration, riparian degradation, Nitrogen & Phosphorous levels and other habitat alterations. No significant impacts to water quality are anticipated because of this project. The conversion from flood to center pivot irrigation could slightly improve these impairments due to decreased diversions and in turn, return flows to the river.

**Groundwater** - Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.

*Determination:*           **No Significant Impact**

There should be no significant impact to groundwater quality or supply. The nature of the conversion from flood to center pivot irrigation will likely reduce the amount of water that was historically lost to deep percolation with the flood irrigation, however the same fields

**will be irrigated with a more efficient sprinkler system. Reduced diversions from the river will offset reduced return flows associated with the new pivot irrigation.**

**DIVERSION WORKS** - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

*Determination:*           **No Significant Impact**

**The diversion works will consist of a pumping plant and center pivot designed and purchased through an irrigation equipment dealer, however the majority of pivot information was provided by the USDA Natural Resources Conservation Service (NRCS) Office in Roundup, Montana. The design summary used for the NRCS EQIP Program shows a pivot length of 1,977 feet. Applicant indicates the pump has a capacity of 1,040 GPM or 2.32 CFS. This equates to a flow rate of 7.9 GPM per acre, which is reasonable for sprinkler irrigation systems in Montana. The pivot is equipped with a means to record the flow rate and volume of all water applied to the field. The flow regime in the Musselshell River will be modified somewhat because flood irrigation will be converted to center pivot irrigation and return flows from the new system will be reduced along with modified timing of those return flows. Operation and timing of return flows under the proposed change is not expected to have any significant impacts; the Applicant will divert less water for pivot irrigation and consume the same volume of water historically used from the source.**

**UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES**

**Endangered and threatened species** - *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

*Determination:*           **No Significant Impact**

**The Montana National Heritage Program website lists six animal species as Species of Concern within Township 7 North Range 24 East. Common names for these species are the Black-tailed Prairie Dog, the Greater Sage-Grouse, the Spiny Softshell (Turtle), Great Plains Toad, Plains Spadefoot and the Northern Redbelly Dace. The website does not show any Potential Animal Species of Concern. No plant species are listed. The USDI Fish & Wildlife Service Website shows that Musselshell County has two species listed as candidates for the Endangered Species Act; the Greater Sage-Grouse and Sprague's Pipit. The website also lists the Black-footed Ferret as endangered and the Red Knot as a proposed species in Musselshell County. This project is not expected to impact any species listed above as the project will be located on acreage that has been previously disturbed by past agriculture practices.**

**Wetlands** - *Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

*Determination:*           **No Significant Impact**

**The acreage involved in this change application has been previously farmed and therefore, wetlands should not be impacted by this project. The USDI Fish & Wildlife Service – Wetlands Online Mapper has no data available for the area of interest.**

**Ponds** - *For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

*Determination:*           **No Significant Impact**

**This project does not involve a pond. No impact to wildlife, waterfowl, or fisheries is anticipated.**

**GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE** - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

*Determination:*           **No Significant Impact**

**The predominant soil type under the pivot irrigation is Havre loam, a well-drained sandy-loam to clay-loam profile. This soil composition is largely nonsaline and should not cause saline seep, especially since this project will involve more manageable water application utilizing center pivot irrigation.**

**VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS** - *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

*Determination:*           **No Significant Impact**

**Other than short-term effects from pipeline and pivot installation, no new disturbance of vegetative cover is expected. The acres under the new center pivot have been previously used for flood irrigation. It is the responsibility of the property owner to control noxious weeds on their property.**

**AIR QUALITY** - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

*Determination:*           **No Significant Impact**

**No impacts to air quality have been identified. The pump will be powered by an electric motor.**

**HISTORICAL AND ARCHEOLOGICAL SITES** - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal*

*Lands. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.*

**Determination: No Significant Impact**

**Not Applicable – Project not located on State or Federal Lands**

**DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY** - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

**Determination: No Significant Impact**

**No significant impacts are anticipated. There will be an increase in electrical energy consumption associated with the pivot operation.**

<h2 style="text-align: center;">HUMAN ENVIRONMENT</h2>
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**LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS** - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

**Determination: No Significant Impact**

**No local environmental plans or goals have been identified.**

**ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES** - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

**Determination: No Significant Impact**

**The proposed action should not negatively affect recreational activities in the area.**

**HUMAN HEALTH** - *Assess whether the proposed project impacts on human health.*

**Determination: No Significant Impact**

**No impacts to human health have been identified.**

**PRIVATE PROPERTY** - *Assess whether there are any government regulatory impacts on private property rights.*

*Yes\_\_\_ No X If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.*

**Determination: No Significant Impact**

**OTHER HUMAN ENVIRONMENTAL ISSUES** - For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.

*Impacts on:*

- (a) Cultural uniqueness and diversity? **None**
- (b) Local and state tax base and tax revenues? **None**
- (c) Existing land uses? **Flood irrigation will be converted to sprinkler irrigation.**
- (d) Quantity and distribution of employment? **None**
- (e) Distribution and density of population and housing? **None**
- (f) Demands for government services? **None**
- (g) Industrial and commercial activity? **None**
- (h) Utilities? **Center pivot pump will be powered by electric motor.**
- (i) Transportation? **None**
- (j) Safety? **None**
- (k) Other appropriate social and economic circumstances? **None**

2. *Secondary and cumulative impacts on the physical environment and human population:*

Secondary Impacts:

Department analysis finds less return flows are expected in the riparian zone along the Musselshell River due to the conversion from flood to sprinkler irrigation. The Applicant proposes to divert less volume with the pivot system and as such, only the timing of the flow regime will be modified. Secondary impacts are expected to be minor, more water will be available in the river during periods of pivot diversion and consumptive use for the new center pivot system as it relates to historic flood irrigation will not change.

Cumulative Impacts:

More and more historic flood acres are being converted to center pivot sprinkler irrigation to facilitate better water management, increased production and reduced labor. Water is more easily managed with a pivot and application rates can be matched to the landowners' specific soil characteristics. Generally, acres under a center pivot system will experience increased production compared to flood acres, which in turn increases crop water consumption. In this instance, the Applicant will be limited to using the same consumptive use after conversion from flood to pivot irrigation. Although conversion from flood to pivot irrigation has the potential to

**allow for increased consumption and significant cumulative impacts, this specific project should not change consumptive use or add to potential cumulative impacts because the Applicant is required to measure water use and the Musselshell River is admeasured through a district court distribution project.**

3. *Describe any mitigation/stipulation measures:*

**The Department may or may not deem specific conditions necessary to meet the statutory criteria for changes of water right set forth at § 85-2-402, MCA. These conditions would be required in the Departments' preliminary determination, if applicable.**

4. *Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*

**No action alternative: Deny the change application. This alternative would result in no change to the existing water rights for irrigation.**

*PART III. Conclusion*

1. *Preferred Alternative*

**The preferred alternative is the proposed alternative.**

2 *Comments and Responses*

**None Received.**

3. *Finding:*

Yes\_\_\_ No **X** *Based on the significance criteria evaluated in this EA, is an EIS required?*

*If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:*

**None of the identified impacts for any of the alternatives are significant as defined in ARM 36.2.524**

*Name of person(s) responsible for preparation of EA:*

**Name: Douglas Mann**

**Title: Water Resources Specialist**

**Date: 1/30/2014**